

WHAT IS CLAIMED IS:

1. A method of processing scanner density values of a digitized image of an original film such that a projection of the digitized image closely matches that image which a film projector would produce when projecting the original film; said method comprising the steps of:

transforming the scanner density values to printing density values;

digital color balancing by writing the printing density values and a LAD

9 patch onto film;

printing the film according to LAD procedure;

transforming the images from device dependent color space values into device independent color space values;

11 carrying out a relationship between the device independent color space ^{values ?} and a display device output to obtain RGB code values;

adjusting any non-linearity between the RGB code values and the display device output; and

scaling the adjusted RGB code values to an appropriate bit depth.

2. A method as set forth in Claim 1, further comprising the step of obtaining the scanner density values by using a motion picture film scanner.

3. A method as set forth in Claim 1, wherein the device independent color space values are CIE XYZ color space values.

4. A method as set forth in Claim 1, wherein the device dependent color space values are printing density value onto motion picture print film,

5. A method as set forth in Claim 1, wherein the transformation into a device independent color space values is implemented by a series of one-dimensional LUTs (Look-Up Tables) and matrices.

6. A method as set forth in Claim 1, wherein the transformation into a device independent color space ^{value} is implemented by a three-dimensional LUT.

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7. A method as set forth in Claim 1, wherein the transformation into a device independent color space values describes a linear relationship between the device dependent color space values and the device independent color space. *values*

8. A method as set forth in Claim 1, wherein the transformation into a device independent color space values describes a non-linear relationship between the device dependent color space values and the device independent color space. *values*

9. A method as set forth in Claim 1, further comprising the step of applying a chromatic adaptation function to the device independent color space values.

10. A method as set forth in Claim 9, wherein the chromatic adaptation function applied to the device independent color space values is a VonKries chromatic adaptation.

11. A method as set forth in Claim 1, wherein the step of carrying out a relationship between the device independent color space values and a display device output is effected by a matrix transformation between the device independent color values and ^{the} RGB code values for the display device.

12. A method as set forth in Claim 1, further comprising the step of applying dark surround adaptation to the RGB code values to accommodate illumination levels and dark surroundings that do not match those conditions where traditional motion picture print film is viewed.

13. A method as set forth in Claim 1, further comprising the step of applying flare corrections to the RGB code values to accommodate illumination levels and dark surroundings that do not match those conditions where traditional motion picture print film is viewed.

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